PATENT

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A transmitter that uses a dual packet configuration for wireless communication, comprising:

a first modulator that modulates a first portion [that is modulated] of each packet solely according to a serial modulation; and

a second modulator that modulates a second portion [that is modulated] of each packet solely according to a parallel modulation.

2. (Currently amended) The [dual packet configuration] transmitter of claim 1, further comprising:

the serial modulation comprising direct sequence spread spectrum (DSSS); and

the parallel modulation comprising orthogonal frequency division multiplexing (OFDM).

3. (Currently amended) The [dual packet configuration] transmitter of claim 2, wherein the first portion includes a preamble and a header.

4. (Currently amended) The [dual packet configuration] transmitter of claim 3, wherein the preamble comprises a long preamble.

5. (Currently amended) The [dual packet configuration] transmitter of claim 3, wherein the preamble comprises a short preamble.

6. (Currently amended) The [dual packet configuration] transmitter of claim 3, the header including an OFDM mode bit.

7. (Currently amended) The [dual packet configuration] transmitter of claim 6, the header further including a length field indicating the duration the second portion.

8. (Currently amended) The [dual packet configuration] transmitter of claim 2, the second portion further comprising:

an OFDM synchronization pattern;

an OFDM signal symbol; and

an OFDM payload.

the OFDM signal symbol including a data rate section and a data count section.

9. (Currently amended) The [dual packet configuration] transmitter of claim 8, further comprising:

the OFDM signal symbol including a data rate section and a data count section.

10. (Currently amended) The [dual packet configuration] transmitter of claim 2, further comprising:

the first portion based on a first clock fundamental; and

the second portion based on a second clock fundamental.

11. (Currently amended) The [dual packet configuration] transmitter of claim 10, wherein the first clock fundamental is approximately 22 Megahertz (MHz) and the second clock fundamental is approximately 20 MHz.

12. (Currently amended) The [dual packet configuration] transmitter of claim 2, wherein the first and second portions are based on a single clock fundamental.

13. (Currently amended) The [dual packet configuration] transmitter of claim 12, further comprising:

the second portion including OFDM symbols wherein each OFDM symbol includes a guard interval with a standard number of samples for OFDM.

14. (Currently amended) The [dual packet configuration] transmitter of claim 12, further comprising:

the second portion including OFDM symbols wherein each OFDM symbol includes a guard interval with an increased number of samples.

15. (Currently amended) The [dual packet configuration] transmitter of claim 12, further comprising:

the second portion including OFDM symbols wherein each OFDM symbol includes a reduced number of frequency subcarriers.

16. (Currently amended) The [dual packet configuration] transmitter of claim 15, wherein each OFDM symbol includes 48 frequency subcarriers.

17. (Currently amended) The [dual packet configuration] transmitter of claim 15, wherein each of the frequency subcarriers is a data subcarrier.

18. (Currently amended) The [dual packet configuration] transmitter of claim 15, wherein the frequency subcarriers include at least one pilot tone.

19. (Currently amended) The [dual packet configuration] transmitter of claim 15, further comprising:

each of the frequency subcarriers initially comprising a data subcarrier; and

wherein the second modulator discards a subset of the data subcarriers [is discarded] and [replaced] replaces the discarded data subcarriers with a corresponding number of pilot tones for transmission[; and

wherein upon reception the discarded data subcarriers are recreated using received data].

20. (Currently amended) A wireless communication device that is configured to communicate using a dual packet configuration, comprising:

a transmitter configured to transmit packets with a dual configuration;

a receiver configured to receive packets with a dual configuration; and

the dual packet configuration including first and second portions, the first portion modulated solely according to a serial modulation method and the second portion modulated according to a parallel modulation method.

21. (Original) The wireless communication device of claim 20, wherein the serial modulation is direct sequence spread spectrum (DSSS) and the parallel modulation method is orthogonal frequency division multiplexing (OFDM).

22. (Original) The wireless communication device of claim 21, the first portion including a header with an OFDM mode bit.

23. (Original) The wireless communication device of claim 22, the header further including a length field indicating the duration of the second portion.

24. (Original) The wireless communication device of claim 21, further comprising:

a first clock source based on a first clock fundamental, the first portion based on the first clock fundamental; and

a second clock source based on a second clock fundamental, the second portion based on the second clock fundamental

25. (Original) The wireless communication device of claim 24, wherein the first clock fundamental is approximately 22 Megahertz (MHz) and the second clock fundamental is approximately 20 MHz.

26. (Original) The wireless communication device of claim 21, further comprising:

a clock source based on a clock fundamental, the first and second portions based on the clock fundamental.

27. (Original) The wireless communication device of claim 26, wherein the second portion includes OFDM symbols, each OFDM symbol including a guard interval with a standard number of samples for OFDM.

28. (Original) The wireless communication device of claim 26, wherein the second portion includes OFDM symbols, each OFDM symbol including a guard interval with an increased number of samples.

29. (Original) The wireless communication device of claim 26, wherein the second portion includes OFDM symbols, each OFDM symbol including a reduced number of frequency subcarriers.

30. (Original) The wireless communication device of claim 29, wherein each of the frequency subcarriers is a data subcarrier.

31. (Original) The wireless communication device of claim 29, wherein the frequency subcarriers include at least one pilot tone.

32. (Original) The wireless communication device of claim 29, further comprising:

the transmitter discarding at least one of the data subcarriers and replacing the discarded data subcarriers with a corresponding number of pilot tones; and

the receiver regenerating the discarded data subcarriers based on received data subcarriers.

33. (Original) The wireless communication device of claim 20, further comprising:

the transmitter and receiver each capable of communicating in a super short mode in which only the second portion modulated according to the parallel modulation is utilized.

34. (Original) The wireless communication device of claim 20, further comprising:

the transmitter and receiver each capable of communicating in a standard mode in which the second portion is modulated according to the serial modulation.

35. (Original) The wireless communication device of claim 20, further comprising:

the transmitter and receiver each configured to operate in the 2.4 gigahertz frequency band.

36. (Currently amended) A method of wireless communication using a dual packet configuration, comprising:

modulating a first portion of each packet solely according to a serial modulation; and

modulating a second portion of each packet according to a parallel modulation.

37. (Original) The method of claim 36, further comprising:

the modulating a first portion of each packet comprising modulating according to direct sequence spread spectrum (DSSS); and

the modulating a second portion of each packet comprising modulating according to orthogonal frequency division multiplexing (OFDM).

38. (Original) The method of claim 37, further comprising:

including a header with an OFDM mode bit in the first portion; and

including a length field in the header indicating a duration of the second portion.

39. (Original) The method of claim 37, further comprising:

the modulating a first portion of each packet comprising modulating based on a first clock fundamental; and

the modulating a second portion of each packet comprising modulating based on a second clock fundamental.

40. (Original) The method of claim 37, wherein the modulating first and second portions of each packet comprises modulating based on a single clock fundamental.

41. (Original) The method of claim 40, wherein the modulating the second portion of each packet comprises including a guard interval with a standard number of samples for each OFDM symbol.

42. The method of claim 40, wherein the modulating the second portion of each packet comprises including a guard interval with an increased number of samples for each OFDM symbol.

43. (Original) The method of claim 40, wherein the modulating the second portion of each packet comprises including a reduced number of frequency subcarriers for each OFDM symbol.

44. (Original) The method of claim 43, further comprising:

discarding a subset of the data subcarriers;

replacing the discarded data subcarriers with a corresponding number of pilot tones for transmission; and

regenerating the discarded data subcarriers based on received data.

45. (Original) The method of claim 36, further comprising:

switching to a super short mode of operation in which only the second portion modulated according to the parallel modulation is utilized for communications.

46. (Original) The method of claim 36, further comprising:

switching to a standard mode of operation in which the second portion is modulated according to the serial modulation.